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## TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

		Application Number	10/676,726-Conf. #2945
		Filing Date	October 1, 2003
		First Named Inventor	Richard D. Thornton
		Art Unit	N/A
		Examiner Name	Not Yet Assigned
Total Number of Pages in This Submission	1	Attorney Docket Number	102320-0037

### ENCLOSURES (Check all that apply)

<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to Group
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	Postcard (in duplicate) IDS (citation) by applicant w/6 references attached
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Response to Missing Parts/Incomplete Application		
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		
Remarks		

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	NUTTER MCCLENNEN & FISH LLP David J. Powsner
Signature	
Date	2/18/04

### Transmittal

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: 2/18/04 Signature: (David J. Powsner)



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Dated: 2/13/04

Signature:

(David J. Powsner)

Docket No.: 102320-0037  
(PATENT)

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Richard D. Thornton et al.

Application No.: 10/676,726

Confirmation No.:

Filed: October 1, 2003

Art Unit: N/A

For: SUSPENDING, GUIDING AND  
PROPELLING VEHICLES USING  
MAGNETIC FORCES

Examiner: Not Yet Assigned

### INFORMATION DISCLOSURE STATEMENT (IDS)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is filed before the mailing date of a first Office Action on the merits as far as is known to the undersigned (37 CFR 1.97(b)(3)).

A copy of each reference on the PTO/SB/08 is attached.

A concise explanation of relevance of the items listed on form PTO/SB/08 is given here.

Patent 3,638,093 (Magnetic suspension and propulsion system; James Ross; Issued Jan. 25, 1972) is an early example of a design that combines suspension and propulsion. This patent also references several of the important older patents dating to 1889. The design requires that

power be transferred to the vehicle in order to propel it and the suspension requires substantial power because it does not use permanent magnets.

Patent 3,842,751 (Transportation system employing an electromagnetically suspended, guided and propelled vehicle; Inventors: Richard Thornton, Henry Kolm; Issued: Oct. 22, 1974) shows how to use a single set of super conducting or permanent magnets to suspend, guide and propel a vehicle but is based on EDS technology so there is no necessity of controlling an otherwise unstable suspension. This design requires the use of wheels for low speed operation and because of the high low speed drag is not well suited to low speed operation.

Patent 3,860,300 (Virtually zero powered magnetic suspension; Inventor: Joseph Lyman; Issued Jan. 14, 1975) shows how to use permanent magnets in a suspension system but the design is for a magnetic bearing and requires entirely separate structures for the permanent magnets and the electromagnets. It does not address the issue of guidance or propulsion.

Patent 3,937,148 (Virtually zeros power linear magnetic bearing; Inventor: Paul A. Simpson; Issued: Feb. 10, 1976) shows how the patent 3,860,300 can be used for transportation applications but requires separate electromagnets and does not address the issues of guidance and propulsion.

Patent 4,088,379 (Variable permanent magnet suspension system; Inventor: Lloyd Perper; Issued: May 9, 1978) builds on the ideas in patent 3,860,300 but it is not directly applicable to maglev using EMS.

Patent 5,722,326 (Magnetic Levitation system for moving objects; Inventor: Richard Post; Issued Mar. 3, 1998) is a variation on patent 3,842,751 that uses Halbach arrays of permanent magnets. It is specific to EDS and does not teach how to use permanent magnets in an EMS design.

In accordance with 37 CFR 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. In accordance with 37 CFR 1.97(h), the filing of this Information Disclosure statement shall not be construed to be an admission that any patent,

publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

It is submitted that the Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed references.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 141449, under Order No. 102320-0037. A duplicate copy of this paper is enclosed.

Dated: 2/18/04

Respectfully submitted,  
By \_\_\_\_\_  
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PTO/SB/08a/b (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Substitute for form 1449A/B/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	1	Complete if Known	
				Application Number	10/676,726-Conf. #2945
				Filing Date	October 1, 2003
				First Named Inventor	Richard D. Thornton
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
				Attorney Docket Number	102320-0037

### U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
AA**	US-3,638,093	01-25-1972	Ross, James A.		
AB**	US-3,842,751	10-22-1974	Thornton, et al		
AC**	US-3,860,300	01-14-1975	Lyman, Joseph		
AD**	US-3,937,148	02-10-1976	Simpson, Paul A.		
AE**	US-4,088,379	05-09-1978	Perper, Lloyd J.		
AF**	US-5,722,326	03-03-1998	Post, Richard F.		

### FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. \*\*CITE NO.: Those patent(s) or publication(s) which are marked with an double asterisk (\*\*) next to the Cite No. are not supplied because they were previously cited by or submitted to the Office in a prior application relied upon in this application for an earlier filing date under 35 U.S.C. 120. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

### NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

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Dated: 9/16/04Signature: 

(David J. Powsner)

Examiner Signature	Date Considered
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